minates in the dorsal nucleus of the same side, and is in relation with the dorsal nucleus of the opposite side.

When the vagus was cut above or below the exit of the laryngeus superior, most of the cells of the ventral nucleus (nucleus ambiguus) degenerated. Only in one out of five cases were a few degenerated cells found in the nucleus ambiguus of the opposite side. The vagus is not connected, therefore, with the contralateral nucleus ambiguus. The ventral nucleus gives origin to the vagus, but contains cells belonging to other nerve fibers, though not to the accessorius.

Cells near the central canal on the medial border of the anterior horn in the upper part of the cervical cord, and lower part of the medulla oblongata are in especial relation with the laryngeus superior.

The accessorius arises from a nucleus in the anterior horn of the cervical cord and the continuation of this nucleus in the medulla oblongata—which is not a part, however, of the vagus nucleus. The bulbar fibers pass into the vagus. The three or four more superiorly situated roots in the medulla oblongata, having their exit at the sulc. post. lat., are in connection with the dorsal nucleus of the vagus, and are united with the accessorius in a part of their course, but really belong to the vagus.

The motor fibers of the laryngeus superior, and the motor fibers of the thoracic and abdominal vagus, arise in the "dense formation" (proximal portion) of the ventral nucleus; the motor fibers of the laryngeus inferior arise in the "loose formation" (distal portion) of this nucleus. SPILLER.

90. LA THÉORIE DES RÉFLEXES (The Theory of Reflexes). E. de Massary (La Presse médicale, 3 Fevrier, 1898, p. 69).

Two arcs are concerned in the production of reflexes; the central, composed of fibers passing from the nuclei of Goll and Burdach to the cortex, with perhaps accessory arcs through the cerebellum; and of the fibers passing from the cortex to the ganglion cells of the anterior cornua of the cord. The peripheral neurons are the accessory fibers passing through the spinal ganglia to the nuclei of Goll and Burdach, and the motor fibers from the ganglia of the anterior cornua to the muscles. Any interference with the peripheral arc produces abolition of reflex. Any interference with the central arc causes exaggeration of reflex. This exaggeration is the result of the inhibitory action of the cells of the cerebral cortex, and is, therefore, produced chiefly by a lesion placed between these and the peripheral arc, that is to say, in the pyramidal tract. SAILER.

91. ON THE BILATERAL ACTION OF THE LATISSIMUS DORSI IN HEMIPLEGIA. C. E. Beevor (British Med. Journal, No. 1970, p. 976).

While examining a patient's chest the author observed that in coughing the latissimus dorsi contracted on both sides, giving a powerful expiratory effort, and this action can readily be felt by any one placing the finger and thumb on the muscle at the posterior border of the axilla and giving a strong cough. In the text books on anatomy this muscle has always been described as a muscle of inspiration, and never as one of expiration.

On placing the hand on the posterior axillary fold and inspiring deeply, some contraction can be felt, but it is very much less than the powerful movement felt on the expiration produced in coughing. It is difficult to understand how the same muscle can be both inspiratory and expiratory, and in a previous paper the author has made the statement that there is no example of a muscle acting diametrically opposite to its usual direction of action, but the latissimus dorsi seems to be an exception. The latissimus dorsi has an extensive origin, and it is suggested that in the action of expiration the part of the muscle which arises from the iliac crest and the spine compresses the abdominal cavity and assists the expiratory movement, while in inspiration the action is produced by the part of the muscle which arises from the three or four lower ribs, elevating them. This respiratory movement is the bilateral action of the muscle, and always affects the muscles of both sides in health.

The unilateral action of the muscle is that on the upper limb, and it is best brought about by making a patient adduct to the side of the chest, the upper limb placed in the horizontal position, and in this movement the muscle acts quite independently of its fellow of the other side.

As a cough can be voluntary or reflex, we have three conditions of action of the muscle, but in the case of a sneeze, which is an involuntary expiration, only two. We have, therefore:

1. Reflex coughing or sneezing; bilateral action.
2. Voluntary coughing; bilateral.
3. Voluntary adduction of humerus; unilateral.

The next question was to examine as to the presence or absence of these actions in hemiplegia. Examination of a dozen cases revealed in all but two the following conditions:

1. In reflex coughing the expiratory action of the latissimus dorsi was about equal on the two sides.
2. In voluntary coughing the action of the latissimus dorsi was obtained on the paralyzed side, but frequently diminished in action or occurred later than on the normal side.
3. In all cases the unilateral voluntary action of adducting the shoulder-joint was absent.

PATRICK.

PATHOLOGY.

92. THE MICRO-ORGANISM OF SIMPLE POSTERIOR BASIC MENINGITIS IN INFANTS. Geo. F. Still (British Med. Journal, 1898, No. 1972, p. 1157).

The simple posterior basic meningitis of infants—a non-tuberculous form of meningitis which occurs mostly within the first year of life, and affects especially the posterior portion of the base of the brain and also the spinal cord—is a condition of no great rarity. In the earlier half of the year it is always more or less prevalent in London, and there can be little doubt that many cases which appear to be tuberculous meningitis are in reality cases of simple posterior basic meningitis. It has been shown on clinical grounds that there is good reason for believing that this form of meningitis is a specific disease, and the author's observations from the pathological and bacteriological standpoint seem to confirm this view.

The cases may be divided into three groups: (i) Those fatal within six weeks—that is, during the acute or inflammatory stage; (ii) those fatal at the end of three or four months—that is, during the chronic or hydrocephalic stage; (iii) those in which recovery occurs.

Corresponding with these variations in the duration of the disease, there are differences of pathological appearance in groups (i) and (ii). In the former there is much lymph over the base of the brain and on the spinal cord; in the latter there may be no trace whatever of lymph, only thickening and opacity of the pia-arachnoid, with ad-